

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONTROL CONSTRUCTION PERMIT**

Stationary Source: Badami Development Facility

Issue Date: Final – August 19, 2005

Permit No.: AQ0417CPT05 Revision 1

Effective Date: August 20, 2005

Rescinds and Replaces Permit No. 417CP04, Revision 2

The Department of Environmental Conservation, under the authority of AS 46.03, AS 46.14, 6 AAC 50, 18 AAC 15, and 18 AAC 50, issues this Air Quality Control Construction Permit to:

Owner/Operator: **BP Exploration (Alaska), Inc. (zip 99508)
900 East Benson Boulevard
Anchorage, AK 99519-6612**

Stationary Source: **Badami Development Facility**

Location: **UTM Zone 6, Northing 7782.6 km, Easting 496.4 km.**

This permit satisfies the obligation of the owner and operator to obtain a construction permit as set out in AS 46.14.130(a).

As required by AS 46.14.120(c) the Permittee shall comply with the terms and conditions of this construction permit.

This permit authorizes the restart of oil production and retains the authorization for warm shutdown operations.

John F. Kuterbach, Manager
Air Permits Program

Date

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PERMIT TERMS AND CONDITIONS

I. Permit Continuity

Permit No. AQ0417CPT05 rescinds and replaces Permit No. 417CP04, Revision 2. Permit No. AQ0417CPT05, Revision 1 makes administrative changes to Permit No. AQ0417CPT05. Permit No. AQ0417CPT05, Revision 1 is effective on August 20, 2005, and replaces Permit No. AQ0417CPT05 in its entirety.

II. Standard Permit Conditions

- A. The Permittee must comply with each permit term and condition; noncompliance constitutes a violation of AS 46.14, 18 AAC 50, and the Clean Air Act, and is grounds for:
 - 1. an enforcement action;
 - 2. permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or
 - 3. denial of an operating permit application.
- B. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.
- C. Each permit term or condition is independent of the permit as a whole, and remains valid regardless of a challenge to any other part of the permit.
- D. Compliance with the permit terms and conditions is considered to be compliance with those requirements that are:
 - 1. included and specifically identified in the permit; or
 - 2. determined in writing in the permit to be inapplicable.
- E. The permit may be modified, reopened, revoked and reissued, or terminated for cause; a request by the Permittee for modification, revocation and reissuance, or termination of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- F. The permit does not convey any property rights of any sort, nor any exclusive privilege.
- G. The Permittee shall allow an officer or an inspector authorized by the Department, upon presentation of credentials and at reasonable times, with the consent of the owner or operator, to:
 - 1. enter upon the premises where an emission unit subject to the permit is located or where records required by the permit are kept;

2. have access to and copy any records required by the permit;
 3. inspect any emission units, equipment, practices, or operations regulated by or referenced in the permit; and
 4. sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.
- H. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit, or to determine compliance with the permit; upon request, the Permittee shall furnish to the Department copies of records required to be kept; the Department, in its discretion, will require the Permittee to furnish copies of those records directly to the federal administrator.

III. Recordkeeping, Reporting, and Testing Conditions

- A. The Permittee shall certify all reports, compliance certifications or other documents submitted to the Department under the permit as required by 18 AAC 50.205.
- B. The Permittee shall submit test plans, reports, certifications, and notices required under this permit to the Department's Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician.
- C. The Permittee shall keep records of required monitoring data and support information for at least five years after the date of the collection; support information includes calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of reports required by this permit. The Permittee shall keep monitoring and compliance records as required by the Clean Air Act and applicable federal air quality regulations.
- D. The Permittee shall conduct source testing as requested by the Department, required by this permit and 18 AAC 50.220. The Permittee shall comply with all applicable federal Air Quality requirements, and shall:
 1. Use the applicable test methods set out in 40 CFR Part 60, Appendix A, and 40 CFR Part 61, Appendix B, effective July 1, 2003, to ascertain compliance with applicable standards and permit requirements.
 2. Conduct source tests of unit exhausts and report the results as described. The Permittee may propose alternative test methods if it can be shown to be of equivalent accuracy, and will ensure compliance with the applicable standards or limits. Alternative test procedures must be approved by the Department prior to the test date.
 - a. Nitrogen Oxides, NO_x, expressed as NO₂ (ppm, lb/MMBtu, lb/gallon, and lb/hr): Reference Method 7E or Method 20 specified in 40 CFR, Part 60, Appendix A.

- b. Oxygen, O₂ (percent): Reference Method 3 or 3A as specified in 40 CFR, Part 60, Appendix A.
 - c. Stack Velocity and Volumetric Flow Rate: Reference Methods 1-4 as specified in 40 CFR, Part 60, Appendix A.
 - d. Particulate Matter, PM (grains/dscf, lb/MMBtu, and lb/hr): Reference Method 5 as specified in 40 CFR, Part 60, Appendix A.
 - e. Sulfur dioxide, SO₂ (ppm, lb/MMBtu, and lb/hr): Reference Method 6 or 6C as specified in 40 CFR, Part 60, Appendix A.
 - f. Visible Emission Surveillance (percent): Reference Method 9 as specified in 40 CFR, Part 60, Appendix A. Visibility source testing is exempt from the requirements listed in conditions III.D.3 through III.D.5. Except as otherwise directed by the Department, attach visible emission source testing results to the Operating Report required by condition III.F of this permit.
 - g. Carbon Monoxide, CO (ppm, lb/MMBtu, and lb/hr): Reference Method 10 as specified in 40 CFR, Part 60, Appendix A.
- 3. Submit to the Department, within 60 days after receiving a request and at least 30 days before the scheduled date of the tests, a complete plan for conducting the source tests.
 - 4. Give the Department written notice of the test dates 10 days before each series.
 - 5. Within 60 days after completion of the set of tests, submit the results, to the extent practical, in the format set out in *Source Test Report Outline* in Volume III, Section IV.3, of the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030(8).
- E. The Permittee may seek Department approval of alternate monitoring, recordkeeping, and reporting requirements than those listed in this permit by submitting a written request to the Department. Until such time as the Department approves an alternative monitoring, recordkeeping, or reporting requirement, the Permittee shall comply with the requirements listed in this permit.
 - F. Permittee shall submit to the Department **two** copies of a quarterly Operating Report, as described in Exhibit B of this permit by February 14th, April 30th, July 30th, and October 30th each year for operations during the preceding calendar quarter.
 - G. No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.
 - 1. If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to condition III.H.

2. As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of condition III.G.
 3. The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if
 - a. after an investigation because of a complaint or other reason, the Permittee believes that emissions from the stationary source have caused or are causing a violation of condition III.G; or
 - b. the Department notifies the Permittee that it has found a violation of condition III.G.
 4. The Permittee shall keep records of:
 - a. the date, time, and nature of all emissions complaints received;
 - b. the name of the person or persons that complained, if known;
 - c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of condition III.F; and
 - d. any corrective actions taken or planned for complaints attributable to emissions from the stationary source.
 5. With each Operating Report under condition III.F , the Permittee shall include a brief summary report which must include
 - a. the number of complaints received;
 - b. the number of times the Permittee or the Department found corrective action necessary;
 - c. the number of times action was taken on a complaint within 24 hours; and
 - d. the status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.
 6. The Permittee shall notify the Department of a complaint that is attributable to emissions from the stationary source within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.
- H. Except as provided in condition III.G, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows:
1. in accordance with 18 AAC 50.240(c), as soon as possible after the event commenced or is discovered, report

- a. emissions that present a potential threat to human health or safety; and
 - b. excess emissions that the Permittee believes to be unavoidable;
 2. in accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or non-routine repair that causes emissions in excess of a technology based emission standard;
 3. report all other excess emissions and permit deviations
 - a. within 30 days of the end of the month in which the emissions or deviation occurs or is discovered, except as provided in conditions III.H.3.b and III.H.3.c;
 - b. if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under condition III.H.3.a; and
 - c. for failure to monitor, as required in other applicable conditions of this permit.
 4. When reporting excess emissions, the Permittee must report using either the Department's on-line form, which can be found at <http://www.dec.state.ak.us/air/ap/docs/eeform.pdf>, or if the Permittee prefers, the form contained in Exhibit E of this permit. The Permittee must provide all information called for by that form that is used.
 5. If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.
- I. The Permittee shall operate each emission unit in compliance with the applicable emission standards specified by 18 AAC 50.040-.070, by an applicable federal New Source Performance Standard (NSPS) or National Emission Standard for Hazardous Air Pollutants (NESHAP), by limits established as the result of a BACT or LAER determination, or the owner-requested emission limits, standards, fuel specifications, and operating limits.

IV. Notification and Operating Conditions

- A. The Permittee is authorized to install and operate the existing and new emission units at Badami listed in Exhibit A, Groups A, B, C, and D.
- B. The Permittee shall develop and implement standard operating and maintenance procedures for each emission unit listed in Exhibit A, Groups A and B of this permit. The Permittee shall keep a copy of the procedures available at a location within the stationary source that is readily accessible to operators of the equipment and to authorized representatives of the Department.

- The Permittee shall install, maintain, and operate, in accordance with standard operating procedures, fuel-burning equipment, process equipment, emission control devices, and testing equipment and monitoring equipment to provide an optimum control of air contaminant emissions during all operating periods.
- C. The Permittee shall develop and provide training at Badami to orient each stationary source operator regarding the terms, conditions, and obligations of this Construction Permit. The Permittee shall maintain a log of the time, place, and list of attendees for each training session and a copy of training material on file at the stationary source.
- D. The Permittee shall develop and implement within 60 days after the effective date of this final permit, a load management plan for Badami power generating units under the possible stationary source operational modes (e.g. normal operations, R warm shutdown, and LT warm shutdown, defined in conditions X.A) that includes:
1. load management procedures during the stationary source's various operational modes to optimize load and the CO emission performance of the Emission Units 500 and 501, and minimize load bank use;
 2. procedures to control, minimize, and avoid load swings during the various operational modes of the stationary source;
 3. procedures to control, minimize, and avoid load swings during periods when the drill rig is on highline power operations;
 4. procedures to optimize operation of the turbines in SoloNOx mode under Arctic operation conditions; and
 5. a load management training/education program for the Badami operators.
- E. Submit two copies of the load management plan as required in condition IV.D to the Department's Fairbanks address as listed in condition III.F, and submit one copy of the plan to the Department's Air Permit Construction Team, 410 Willoughby Ave., Suite 303, Juneau, AK 99801.
- F. The Permittee shall not operate Emission Unit 500 and/or 501 in stand-by, redundant operation, or idle running, except during emergencies, source testing, emission unit start up, shut downs, maintenance or load transfers.
- G. Operating Hours--The Permittee shall:
1. monitor the time and date of the first start up¹ of Emission Units 500 and 501;
 2. monitor the hours of operation for Emission Units 420 and 421, as required in condition V.E.3.a;

¹ In this condition, "first start up" means the first time after the effective date of this permit.

3. for Emission Units 500 and 501,
 - a. monitor the hours of operation, stationary source operational mode (normal operations, R warm shut down, LT warm shut down), and whether the Solar SoloNO_x emission controls are activated or not, as required in conditions IX.B.1.b(1)i, IX.B.1.b(2), and IX.B.1.b(1)iii, . Include the operational mode of the units (e.g. normal, stand by, redundant operation, or idle running);
 - b. record hourly values of the load bank load in kW, based upon data kept in a written log noting date, time, and “before” and “after” settings of the load bank made
 - (1) at each instance when the load bank load is adjusted, and
 - (2) twice daily coincident with physical inspections of the load bank, whenever Emission Unit 500 and or 501 is operating;
 - c. for condition IV.G.3.b, specify, with the load bank load, under which operational mode the stationary source is operated (normal operations, R warm shutdown, LT warm shutdown); and
4. report in the Operating Report required by condition III.F, all information as required in conditions IV.G.1 through IV.G.3.

V. Ambient Air Quality Standards and Increments, and Owner Requested Limits.

The Permittee shall not interfere with the attainment or maintenance of the Ambient Air Quality Standards listed in 18 AAC 50.010, and shall not cause or contribute to a violation of the maximum allowable increases (the PSD increments) listed in 18 AAC 50.020 as follows:

- A. **Miscellaneous Provisions.** Flare natural gas quantities during the routine or non-routine maintenance activities and other planned events. The Permittee shall flare produced gas quantities no greater than 152 MMscf of natural gas during any 12 consecutive month period, at a rate of no greater than 20 MMscf per day.
- B. **Air Quality Boundary.** Establish and maintain the ambient boundaries used in the ambient impact analysis using the following procedures.
 1. Comply with the May 10, 2005 “CPF Pad Badami Unit - Public Access Control Plan” (Plan)², or a subsequent written version approved by the Department that contains at least the following elements:

² The Plan is included in this permit as Appendix G. BPXA submitted the Plan to ADEC by email on May 10, 2005. The Department resized the figures in Exhibit G (for formatting purposes), therefore, the indicated scales may no longer be accurate. However, all critical dimensions are shown and remain valid.

- a. a topographic map (or maps) that clearly shows the ambient boundaries, water bodies and Central Process Facility (CPF) pad;
 - b. ambient boundaries that are consistent with the land owner's authorization to preclude public access from the area within the boundaries;
 - c. defined methods of establishing and maintaining the boundary; and
 - d. the date of the revised Public Access Control Plan.
2. Do not revise the ambient air boundaries without Department approval. If requested by the Department, submit a revised ambient air impact analysis that demonstrates the emission activities will not cause or contribute to ambient air violations when using the proposed boundary.
 3. Submit all proposed revisions of the Plan, including the ambient boundary, to the Department's Juneau and Fairbanks Office's. Do not implement any change without written Department approval.

C. Fuel Sulfur Limits.

1. Operate the natural gas-fired emission units using natural gas fuel with a hydrogen sulfide (H_2S) content not to exceed 250 parts per million by volume (ppmv).
2. Operate diesel-fired emission units using distillate fuel oil with a fuel sulfur content not to exceed 0.15 percent sulfur by weight (wt%S), except for intermittently used oil field support equipment.³

D. Fuel Volume Limits.

1. In Emission Units 420 and 421, burn a combined total of no more than 800,000 gallons of liquid fuel during any 12 consecutive month period.
2. In all drill rig emission units, burn a combined total of no more than 9,000 gallons per day and 950,000 gallons of liquid fuel during any 12 consecutive month period.

E. Monitoring and recording. The Permittee shall monitor and record as follows:

1. Obtain a statement or receipt from the fuel supplier certifying the total fuel sulfur content of the fuel for the diesel and gas fired emission units. If a certificate is not available from the supplier, then analyze a representative sample of the fuel to determine the sulfur content in accordance with condition VIII.D.6.
2. Record the date and duration during which gas flaring occurs, and the quantity of gas flared.

³ This permit does not impose fuel sulfur restrictions on intermittently used oilfield support equipment. The Department has instead established off-permit fuel sulfur targets for these units in Policy and Procedure Number 04.02.105 (effective October 8, 2004).

3. For Emission Units 420 and 421, install and operate for each unit a dedicated continuous engine hour monitoring system, and a dedicated fuel meter accurate to less than five percent error.
 - a. Monitor and record the daily hours of engine operation and identify the stationary source operational mode (e.g. normal operations, R warm shutdown, LT warm shutdown).
 - b. Monitor and record the monthly fuel consumption for each unit, calculate and record the 12 consecutive month combined fuel consumption.
 - c. If the fuel meter for Emission Units 420 and 421 is out of service, estimate the gallons of fuel consumed for the emission units using the hours of operations recorded in condition V.E.3.a, assuming the 100 percent load fuel consumption rate in gallons per hour for the unit for any period during which the unit was operating. The fuel consumption rate shall be the design fuel consumption of 84.5 gallons per hour.
 4. Monitor and record for each day, the quantity of the fuel combusted in drill rig emission units, combined. Calculate and record the 12 consecutive month total fuel consumption.
- F. **Reporting.** The Permittee shall report in the Operating Report required by condition III.F:
1. the fuel sulfur test results, or attach copies of vendor certification or analysis reports for fuel sulfur content in accordance with condition VIII.D;
 2. the duration of gas flaring and the total quantity of gas flared; describe or document whether the flaring incident is considered an emergency operation, routine or non-routine maintenance operation, or other planned event;
 3. for Emission Units 420 and 421:
 - a. the monthly and 12 consecutive month total fuel consumption, combined as required by condition V.E.3.b; and
 - b. the monthly and 12 consecutive month hourly operation, combined as required by condition V.E.3.a; and
 4. for the drill rig report, for each day, monthly, and 12 consecutive month fuel consumption for all drill rig emission units, combined.

VI. Federal Standards Adopted by Reference

The Permittee shall comply with the requirements of 40 CFR 60, NSPS, and 40 CFR 61, NESHAPs, as they apply to the equipment specified below.

The Permittee shall submit a copy of all NSPS and NESHAPs reporting to the U.S. Environmental Protection Agency (EPA) Region 10 and the Department, as required

by the applicable federal standards. The Permittee may attach periodic federal reporting to the Operating Report required by condition III.F.

The Permittee shall notify the Department of any EPA granted waivers of NSPS or NESHAP emission standards, recordkeeping, monitoring, performance testing, or reporting requirements within 30 days after the Permittee receives a waiver.

- A. 40 CFR 60, Subpart A. In accordance with 40 CFR 60, Subpart A, 40 CFR 61, Subpart A, and 18 AAC 50.040, for each construction, modification, or reconstruction of affected facilities and sources regulated under 40 CFR 60 and 61, the Permittee shall notify the Department and EPA of anticipated beginning construction date, initial equipment start-up date, actual equipment start-up date, and performance test date, and submit all information required under 40 CFR 60.6-60.8, 60.11-13, 60.14-19, 40 CFR 61.07, and 61.09-61.14.
- B. 40 CFR 60, Subpart GG; Gas-Fired Turbines--Emission Unit 500 and 501.
 1. Applicability and designation of affected facilities, 40 CFR 60.330. Affected units are all stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10.1 MMBtu/hr) based on lower heating value as described in 40 CFR 60.330(a) and (b).
 2. Standard for NO_x, 40 CFR 60.332(a)(2). The Permittee shall comply with the NO_x emission limitation as listed in 40 CFR 60.332(a)(2). The limit is $STD = 0.0150(14.4)/Y + F$; where STD is the allowable NO_x emissions (percent by volume) at 15% O₂, Y is the manufacturer's rated heat rate (kilojoules per watt hour), and F is the emission allowance for fuel-bound nitrogen.
 3. Standard for SO₂, 40 CFR 60.333. The Permittee shall comply with the SO₂ NSPS listed in 40 CFR 60.333(a) (no greater than 0.015 percent by volume (150 ppmv) SO₂ in the exhaust), or (b) (no greater than 0.8 percent by weight sulfur in the fuel. The Permittee shall comply with these requirements by burning natural gas with the H₂S fuel limit of no greater than 250 ppmv.
 4. Monitoring of operations, 40 CFR 60.334. The Permittee shall comply with 40 CFR 60.334(h) to monitor the nitrogen and sulfur content of the fuel gas. The Permittee shall record the fuel gas sulfur content as specified in 40 CFR 60.334(h), or semiannually in accordance with the custom schedule and plan approved by EPA on November 12, 1998, or a revised custom schedule and plan approved under 40 CFR 60.334(i)(3).
 5. Test methods and procedures, 40 CFR 60.335. The Permittee shall conduct performance tests in accordance with condition III.D as required in 40 CFR 60.335(a) and (b), or alternative test methods in accordance with 40 CFR 60.335(c).

VII. Incinerator Emission Standards

Emission Units 422 and 502:

- A. The Permittee shall comply with 18 AAC 50.050(a)(2), which states that visibility through the exhaust effluent of an incinerator may not be reduced by visible emissions, excluding condensed water vapor, by more than 20 percent averaged over any six consecutive minutes.
- B. No less than once each calendar year and upon Department request, the Permittee shall conduct a Method 9 visible emission observation on the incinerator exhaust stack for Emission Unit 422 if the emission unit operates during the calendar year to ascertain compliance with 18 AAC 50.050(a)(2). The Permittee shall attach visible emission observation results to the Operating Report as required by condition III.F.
- C. The Permittee shall certify in each Operating Report under condition III.F whether Emission Unit 502 fired only on propane or natural gas.

VIII. Industrial Processes and Fuel-Burning Equipment

Emission Units 419-421, 500, 501, 503-505, 507:

- A. The Permittee shall comply with 18 AAC 50.055(a)(1) and 18 AAC 50.055(b)(1), which state that visible emissions, excluding condensed water vapor, from an industrial process or fuel-burning equipment may not reduce visibility through the exhaust effluent by greater than 20 percent, for six minutes average, and PM emitted from an industrial process or fuel-burning equipment may not exceed, per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours, 0.05 grains.
- B. The Permittee shall comply with 40 CFR 52.70(c)(16)(i)(c) pertaining to visible emissions which states that visible emissions, excluding condensed water vapor, from an industrial process or fuel burning equipment may not reduce visibility through the exhaust effluent by greater than 20 percent, for a total of more than three minutes in any one hour.
- C. The Permittee shall comply with 18 AAC 50.055, which states that sulfur compound emissions, expressed as SO₂, may not exceed 500 ppm averaged over a period of three hours. The Permittee shall ensure compliance with this requirement by using only natural gas fuel with a H₂S content not to exceed 250 ppmv, and by using only distillate fuel oil with a sulfur content not to exceed 0.15 wt%S.
- D. **Monitoring and Recording.** The Permittee shall:
 - 1. For Emission Unit 419 conduct a visible emission surveillance in accordance with condition III.D no less than once per calendar year. Include the operational mode of the stationary source (e.g. normal operations, R warm shutdown, LT warm shutdown)

2. For Emission Units 420 and 421, conduct visible emission surveillance in accordance with condition IX.B.3.
3. For Emission Units 500, 501, and 503 through 505, certify in each Operating Report under condition III.F whether the emission units fired only natural gas.
4. For Emission Unit 507 (Flare System), conduct one visible emission surveillance each calendar year during a maintenance flaring event, if an event occurs during the calendar year.
5. Upon Department request, conduct a PM emission test or visible emission surveillance as set out in condition III.D.
6. Measure the H₂S content of natural gas fuel in accordance with condition VI.B.4. Measure the fuel sulfur content of distillate fuel oil in accordance with sulfur measurement methods incorporated by reference within ASTM D 196 no less than once a month. The Permittee may alternatively attach a vendor certification documenting the fuel sulfur content of each fuel delivery to Badami.

E. Reporting. The Permittee shall:

1. Attach to the Operating Report under condition III.F, Visible Emission Reports for a surveillance conducted under conditions VIII.D.1, VIII.D.2, VIII.D.4, and VIII.D.5.
2. List in the Quarterly Operating Report under condition III.F:
 - a. the monthly average natural gas fuel H₂S content; and
 - b. the analytical results of distillate fuel oil sulfur content or vendor certification required by condition VIII.D.6.

IX. Best Available Control Technology

The Permittee shall install emission or operational controls as BACT for the following equipment:

A. Limits.

1. NO_x BACT for fuel burning equipment at Badami is no post-combustion emission control with good operational practices.
 - a. The Permittee shall install and operate as BACT for the following fuel burning equipment at Badami:
 - (1) Emission Units 500 and 501 with dry low NO_x combustion technology (SoloNO_x);
 - (2) Emission Units 420 and 421 with variable-step fuel injection timing retard (FITR) as incorporated by the manufacturer;

- (3) Emission Unit 503 with low NO_x burners/flue gas recirculation.
 - (4) Emission Unit 504 with conventional burner technology; and
 - (5) Emission Unit 505 with conventional burner technology;
- b. The Permittee shall comply with the following NO_x emission limits. Emissions from:
 - (1) Emission Units 500 and 501 shall not exceed 28.4 lbNO_x/hr for operation under all conditions, and shall not exceed 85 ppmv corrected to 15 percent oxygen in SoloNO_x mode and at ambient temperatures above 0°F;
 - (2) Emission Unit 503 shall not exceed 0.095 lb NO_x/MMBtu;
 - (3) Emission Unit 504 shall not exceed 0.12 lbNO_x/MMBtu; and
 - (4) Emission Unit 505 shall not exceed 0.08 lbNO_x/MMBtu.
- 2. CO BACT for fuel burning equipment at Badami is no post-combustion emission control with good operational practices. The Permittee shall comply with the following CO emission limits as representative of BACT. Emissions from:
 - a. Emission Units 500 and 501 shall not exceed 50 ppmv corrected to 15 percent oxygen when operating at 100 percent load in SoloNO_x mode at ambient temperatures above 0°F, 14 lb/hr when operating in SoloNO_x mode and at ambient temperatures above 0°F, and 385 lb/hr for operation under all other conditions;
 - b. Emission Unit 503 shall not exceed 0.10 lb CO/MMBtu;
 - c. Emission Unit 504 shall not exceed 0.12 lb CO/MMBtu; and
 - d. Emission Unit 505 shall not exceed 0.15 lb CO/MMBtu.
- 3. Limit CO emissions from Emission Units 500 and 501 to no greater than 336 tons per 12-consecutive month period. Monitor, record according condition IX.B.1.b, report according to condition IX.C.2.
- 4. SO₂ BACT for fuel burning equipment at Badami is use of low sulfur fuel with no post-combustion controls. The Permittee shall comply with the following fuel sulfur limits as representative of BACT:
 - a. H₂S content of natural gas fuel shall not exceed 250 ppmv; and
 - b. sulfur content of fuel oil shall not exceed 0.15 wt%S.
- 5. VOC BACT for fuel burning equipment and fuel storage tanks, and water treatment processes at Badami is no controls with good operation practices. BACT for water injection tanks and slop tank is a sealed system design. The flare

BACT determination is smokeless tip design. No emission limits are imposed as representing BACT.

6. PM less than 10 microns control technology (PM-10) BACT for fuel burning equipment at Badami is no controls with good operation practices. The Permittee shall comply with the following surrogate PM-10 emission limits as representative of BACT. Visible emissions from:
 - a. Emission Units 420 and 421 shall not exceed:⁴
 - (1) 20 percent opacity for greater than three minutes in any one hour, during production activities including Normal Operations and R warm shut down; and
 - (2) 10 percent opacity for greater than three minutes in any one hour, during LT warm shutdown.
 - b. Emission Units 500 and 501 shall not exceed 10 percent opacity for greater than three minutes in any one hour.
 - c. All other industrial processes, incinerators, and fuel-burning equipment shall comply with the applicable State visible emission standards listed in conditions VII.A and VIII.A.

B. Monitoring and Recordkeeping.

1. NO_x and CO--Permittee shall monitor and record compliance as follows:
 - a. For Emission Units 420 and 421, evaluate and certify engine fuel injection/FITR settings no less once each calendar year by verifying or adjusting the fuel injection/FITR settings according the engine manufacturer procedures.
 - b. For Emission Units 500 and 501:
 - (1) Using the existing computer-based control system, monitor and record:
 - i. the daily operating time (record time in minutes or decimal portions of an hour);
 - ii. the hourly average percentage natural gas producer (% NGP) speed (use six minute intervals to calculate the average % NGP speed for each hour of operation); and
 - iii. time in and out of SoLoNO_x operation for each unit.
 - (2) For each time period that the units are operating, monitor and record the stationary source operational mode (as defined in condition X.A),

⁴Operational modes according to condition X.A of this permit.

- (3) Calculate and record the hourly NO_x and CO emissions for Emission Units 500 and 501 by using the hourly average percentage NGP speed (as determined in condition IX.B.1.b(1)ii to determine the NO_x and CO emission factors listed in Table 1. Multiply the NO_x and CO emission factor by the hours of operation as determined in condition IX.B.1.b.
 - (4) On calendar month basis, calculate and record the total monthly and 12-consecutive month period NO_x and CO emission rates for each Emission Unit 500 and 501.
 - (5) On a calendar month basis, calculate and record the total and 12 consecutive month period NO_x and CO emission rates for Emission Units 500 and 501 combined.
 2. SO₂--Conduct fuel sulfur monitoring and recordkeeping in accordance with conditions VI.B and VIII.D.
 3. PM--For all units except to Units 420 and 421, conduct visible emission surveillance monitoring in accordance with conditions III.D and VIII.D. For Emission Units 420 and 421, conduct visible emission surveillance monitoring in accordance with condition III.D and as follows:
 - a. Except as indicated in condition IX.B.3.b, conduct the surveillance on each unit no less than once per calendar quarter. Include the operational mode of the stationary source (e.g. normal operations, R warm shutdown, LT warm shutdown) on the surveillance form.
 - b. If four consecutive quarters show compliance with a given standard listed in condition IX.A.6.a, for a given unit, then the Permittee may reduce the frequency of visible emission observations required in condition IX.B.3.a for that standard and that unit to no less than once per calendar year.

C. Reporting. The Permittee shall:

1. For Emission Units 420 and 421, report fuel injection/FITR settings and the manufacturer recommended procedures and settings.
2. For Emission Unit 500 and 501 report:
 - a. the monthly and 12 consecutive month hours of operation for Emission Units 500 and 501 each, as required by condition IX.B.1.b; and
 - b. the monthly and 12 consecutive month total NO_x and CO emissions for Emission Units 500 and 501, each and the combined total as required in condition IX.B.1.b(2).
3. SO₂--Report fuel sulfur content as required by under condition VIII.E.2.

4. PM-10--Report the results of the visible emission surveillance reports as required by condition VIII.E.1.

X. General Conditions Restart Project

- A. The Badami restart project is limited to a maximum 36 months after first start up of either Emission Unit 500 or 501, after the effective date of this permit. The Badami restart project operational modes are defined as follows:
 1. Recharge (R) warm shutdown operational mode is an operating mode that occurs during the re-start period described in condition X.A. The R warm shutdown period is characterized by limited operation of the stationary source emission units. This operational mode is to allow the oil reservoir to recharge.
 2. Long Term (LT) warm shut down operational mode is an operating mode that occurs after the end of the re-start period described in condition X.A, or occurs during the restart period if the Permittee has discontinued plans to return to Normal Operation during that period. The warm shut down mode is characterized by limited operating of the emission units to maintain equipment integrity. During the LT warm shutdown period the stationary source oil, gas and water production process is not active and the stationary source is dormant.
 3. Normal Operations is the period that the stationary source is not in R warm shut down mode or LT warm shut down mode as described in condition X.A.1 and X.A.2.
- B. **Monitoring and recordkeeping.** The Permittee shall
 1. record date and time when the Normal Operations, R warm shutdown, and LT warm shutdown operations are started and terminated; and
 2. calculate and record the 12 consecutive month period NO_x and CO emission rate in accordance with conditions IX.B.1.b(4) and IX.B.1.b(5).
- C. **Reporting.** The Permittee shall list the date and time when the Normal Operations, R warm shutdown, and LT warm shutdown as described in condition X.A are started and terminated in the Quarterly Operating Report under condition III.F:

XI. Operating Mode Consequences

- A. The Permittee shall within 60 days after the 36 calendar months period, as described in condition X.A, submit to the Department a demonstration of load demand (power demand), consistent with the definition in condition XI.B, based on the stationary source operations during the 36 calendar months period as set out above, including the period(s) that the stationary source is operated under a R warm shut down regime (recharge). The demonstration must provide adequate information for determining if replacement or modification of Emission Units 500 and 501 is warranted. The demonstration shall include, but is not limited to, the following elements:

1. detailed description of the Badami operational modes, and related electric energy demands;
 2. the intended usage of the electrical loads and their collective impact on the generators, including specification of lighting, electrical motor loads, and possible electric load swings; and
 3. if condition XI.C is not met, detailed description(s), technical data, emission performance data of the selected equipment as required in condition XI.D.
- B. For purposes of the load demand demonstration, load demand is defined as the electrical power (in kW) that is required to operate the stationary source⁵ under the various operational modes during the 36 month period *without* electric load demand from load banks, water brakes, pump flow controls, or other loads that has the single purpose to destroy energy in order to improve the CO emission performance of the fuel fired generators.
- C. If results from the load demand demonstration show that the Emission Units 500 and 501 are capable of operating consistently in SoloNOx⁶ mode for 95 percent of the operating time, excluding startup, shut down, malfunction, maintenance, load transfer, source testing, and emergencies⁷, without using artificial load demand equipment as indicated in condition XI.B, then the Permittee is not subject to condition XI.D. To demonstrate this capability, the Permittee must show that the 95 percent threshold has been met continuously during a substantial portion of the restart period that will be representative of future operation.
- D. If the results from the load demonstration do not show that the provisions of condition XI.C are met, then the Permittee shall submit to the Department within 45 days, after submittal of the load demand demonstration subject to condition XI.A, a construction permit application, except as provided in condition XI.D.2. The application shall include the request for authorization for replacement of the existing combustion turbine(s) or for installation of CO emission controls on the existing combustion turbine(s).
1. The Permittee shall after the load demand demonstration and after new permit issuance and within the time specified in that new permit:
 - a. install and operate power generation equipment that is properly rated, and capable of operating for the specific application with appropriate NO_x and CO emission controls for the available load demand without using artificial load demand equipment⁸ as indicated in condition XI.B, or

⁵ “Load demand” is the “real power demand” to operate Badami, including support systems (e.g. light and power for workshops, workers housing, refrigerators, cookhouses, communication systems, laundry, etc.).

⁶ Emission Units 500 and 501 Solar Gas Turbines in SoloNOx means that the gas turbine NOx emission controls are activated.

⁷ The Department considers 120 minutes (two hours) operation maximum during equipment startup, and shutdown of the gas turbines.

⁸ This includes the use of a load leveling device to mitigate the stationary source normal load swings in the

- b. install post combustion CO controls; controls must be at least as stringent as
 - (1) selective catalytic oxidation, with a destruction efficiency as determined per condition XI.F.2 on the existing emission units; and
 - (2) BACT as demonstrated in condition XI.E.
 - 2. If the stationary source does not operate in Normal Operation mode during the first 105 days after the 36 calendar month period, the Permittee shall submit to the Department a construction permit application as identified in condition XI.D before resuming Normal Operation.
- E. The Permittee shall provide within five months after the 36 month period, a NO_x and CO BACT analysis for Emission Units 500 and 501, or their replacements, except that a NO_x BACT analysis is not required if the Permittee demonstrates that condition XI.C will be met during the future operations of Badami and the results of the power demand described in conditions XI.A.1 and XI.A.2 indicate that existing Emission Units 500 and 501 will be well aligned to Badami's future power needs. Any new BACT limits under this condition must be equal to or lower than the limits in condition IX.A of this permit. The Permittee shall conduct the analyses according to EPA's "top-down" approach in the proposed New Source Review Rule Revisions (EPA 1990). The BACT assessments shall include, but not be limited to, the following elements:
- a. cost estimates, cost proposal specific for Badami and actual cost data, cost indexed for the year that the analysis is provided;
 - b. the cost elements used in the BACT cost analysis must be accompanied with copies of the original Vendor quotes, including the scope of supply, services.
 - c. the cost analysis to be performed according the guidelines as set out in "EPA Air Pollution Control Cost Manual" US EPA, latest edition.
- F. CO BACT analysis for Emission Units 500 and 501 and replacement equipment shall include but not be limited to the following CO emission control technologies:
- 1. Low NO_x turbine, or other available NO_x control technologies for the turbine suitable for the specific Badami operation conditions.
 - 2. For the CO controls with catalytic controls include in the cost assessment the catalyst control strategies for 80, 85 and 90 percent long term control efficiency;
 - 3. Cost analysis to include the vendor based data regarding operation, supervision and maintenance costs of the emission controls.

operational load. The load leveling device is only used in specific operations where load swings are expected (e.g. Start up large electro motors, electric block loads).

- G. After receiving a complete BACT analysis under condition XI.E, and any additional information the department needs to complete review, the department will issue a BACT determination.
1. If the results of the load demonstration show that the provisions of condition XI.C are met, the Permittee shall operate in compliance with the new BACT determination within 15 months after the date the Department issues the final determination.
 2. If the results of the load demonstration show that the provisions of condition XI.C are *not* met, the Permittee shall operate in compliance with the new BACT determination consistent with condition XI.D.

XII.LT Warm Shutdown Mode Consequences

This section applies for operating in the LT Warm Shutdown Mode.

- A. The Permittee shall within 60 days after the 36 calendar months after beginning the restart project as described in condition X.A, submit to the Department a power generation demonstration that will provide the information necessary to determine if emission unit re-sizing, and output optimizing is necessary in the LT warm shut down mode. The demonstration must include a detailed study regarding the power generation during the LT warm shutdown mode. The demonstration will include but is not limited to the following elements:
1. detailed description of the power demand during the LT warm shutdown, and the available fuels;
 2. for each option as described in condition XII.A.5, the potential NO_x, CO, PM-10, VOC, and SO₂ emissions, and the emission performance under Badami-specific conditions (fuel, Arctic cold, and load characteristics);
 3. demonstration of possible reduction of NO_x, CO, PM-10 and VOC emissions for each of the options compared to power generation with the existing emission units during the LT warm shut down.
 4. for the option described in condition XII.A.5.a, the Permittee shall submit a cost analysis that includes the total cost of the conversion, based on the conversion parts costs of the new (converted parts) minus the replaced components remainder value; and
 5. supply options for generating electric power during LT warm shutdown operation to include:
 - a. converting one or both of the existing diesel-fired generators, Emission Units 420 and 421, to natural gas firing or duel fuel (natural gas and diesel) firing;
 - b. installing and operating of new, appropriately sized generator(s) driven by a natural gas-fired reciprocating engine(s);

- c. installing a new, appropriately sized generator driven by a natural gas-fired combustion turbine; or
 - d. installing some other, not yet identified, innovative technology such as a multiple micro-turbine driven generator set; fuel cell; sterling engine or wind-driven turbine generator.
- B. The Permittee shall not operate the existing Emission Units 500 and 501 (Solar Mars 90 turbines with SoloNOx) for power generation during the LT warm shutdown mode, except that the Permittee may operate existing Emission Units 500 and 501 for no more than 60 hours during any 12 consecutive months in response to emergency conditions.
- C. **Monitoring and recordkeeping.** The Permittee shall monitor and record the monthly operating hours for Emission Units 500 and 501 as set out in condition IV.G.3. Specify the reason of operation of the gas turbine.
- D. **Reporting.** The Permittee shall list in the Operating Report under condition III.F:
 - 1. the monthly and consecutive 12-month total hours;
 - 2. as set out in condition IV.G.4, dates and times when the Normal Operations, R warm shutdown, and LT warm shutdown (as described in condition X) are started and stopped; and
 - 3. reason for operating Emission Units 500 and 501 in the LT warm shut down mode during the period.
- E. If the Permittee decides to terminate the LT warm shut down operations as set out in condition X.A.2, and start operations in modes under conditions X.A.1 or X.A.3, before starting operations in modes under conditions X.A.1 or X.A.3, the Permittee shall provide the demonstrations under conditions XI.A and XI.E through XI.G. The Permittee shall comply with conditions XI.D and XI.G.

Table 1 - Badami Restart Solar Gas Turbine NO_x and CO Emission Factors

Emission Unit	Description	Gas Turbine Load Condition (% NGP)	CO emission factor
500 -501	Solar Mars 90 SoloNO _x gas turbine	% NGP speed average hourly value	
	In SoloNO_x mode		4.7 lb/hr
	Out SoloNO_x mode	% NGP \geq 94	4.7 lb/hr
		% NGP \geq 90 and $<$ 94	202.0 lb/hr
		% NGP \geq 87 and $<$ 90	236.0 lb/hr
		% NGP \geq 84 and $<$ 87	261.9 lb/hr
		% NGP $<$ 84	385 lb/hr
			NO_x emission factor
	In and Out SoloNO_x mode	All % NGP	28.4 lb/hr

EXHIBIT A - PERMITTED EMISSION UNIT INVENTORY

The Permittee is authorized under this permit to operate the following stationary emission units. The design rating, capacity, or throughput is set out in this exhibit only for the purpose of aiding in the identification of the emission unit. The Permittee must notify the Department as described in conditions V.B, XI.D, XI.D.1.a, XI.D.1.b, XII prior to selecting other equipment, make, models, and size, to determine the applicability of regulatory requirements.

I. OPERATIONAL EMISSION UNITS

A. Other Emission Units Inventory

Emission Unit No.	Equipment Use	Description	Maximum Operation	Typical Fuel	Maximum Heat Rate/unit
417	Diesel Tank	Unknown	8,760 hr/yr ^a	Diesel	15,000 bbl nominal capacity
418	Methanol Tank	Unknown	8,760 hr/yr ^a	Methanol	450 bbl nominal capacity
419	Glycol Skid Heater	Unknown	8,760 hr/yr ^a	Diesel	1.05 MMBtu/hr
420, 421	Main Generators	Cummins IC engine	800,000 gal/yr ^a	Diesel	1,855 hp

^a Per year means any twelve consecutive month period.

B. Stationary Source Emission Units

Emission Unit No.	Equipment Use	Description	Maximum Operation	Typical Fuel	Maximum Heat Rate/unit
500, 501	Turbines	Solar Mars 90	8,760 hr/yr ^c	Natural Gas	11,862 kW
502	Incinerator, Waste combustion	Therm-Tec G-12	8,760 hr/yr ^c	Propane/Natural Gas/Waste	1.6 MMBtu/hr 85 lb/hr
503	Production Heater	NATCO	8,760 hr/yr ^c	Natural Gas	34 MMBtu/hr
504	Miscible Injection Heater	NATCO	8,760 hr/yr ^c	Natural Gas	14.87 MMBtu/hr
505	TEG Reboiler	NATCO	8,760 hr/yr ^c	Natural Gas	1.34 MMBtu/hr
507	Flare-Pilot Flare- Purge Flare-Assist	Unknown	8,760 hr/yr ^c	Natural Gas	0.1652 MMscf/hr ^b
	Flare- Produced Gas	Unknown	Other ^a	Natural Gas	20 MMscf/day 152 MMscf/yr
508	110 barrel TEG Storage Tank		8760 hr/yr ^c	NA	110 bbl nominal capacity

^a The Permittee is authorized to flare up to 152 MMscf gas under “other” operations per 12 consecutive month rolling period, at rate of no greater than 20 MMscf per day. Other indicates: the specific flare operations related routine or non-routine maintenance and other planned events. The design rating/output 257.9 MMscf/yr.

^b Combined pilot, purge, and assist gas.

^c Per year means any consecutive twelve month period.

C. Portable Equipment

Emission Unit No.	Equipment Use	Description	Maximum Operation	Typical Fuel	Maximum Heat Rate/unit
422	Smart Ash Incinerator	Smart Ash 100-A (on storage pad)	8,760 hr/yr ^a	Oily Waste	0.035 tons/hr
601, 602	Light Plants	Unknown	8,760 hr/yr ^a	Diesel	12.1 hp
607, 608, 611, 612	Heaters-Indirect fire heaters	Unknown	8,760 hr/yr ^a	Diesel	1 MMBtu/hr

^a Per year means any twelve consecutive month period.

D. Drill Rig Equipment

Emission Unit No.	Equipment Use	Description	Maximum Operation	Typical Fuel	Maximum Capacity
1	Rig Engines ^a	Unknown	8,760 hr/yr ^b	Diesel	N/A
8	Rig Boilers and Heaters ^a	Unknown	8,760 hr/yr ^b	Diesel	N/A

^a The Permittee is authorized to operate any of the drill rigs listed in Permit No. 455TVP01, Revision 1.

^b Per year means any twelve consecutive month period.

EXHIBIT B - OPERATING REPORT

Submit to the Department two copies of the quarterly Operating Reports, no later than the 30th day of April, July, October, and the 14th day of February for operations during the preceding calendar quarter, as required in condition III.F of this permit. This report shall include the following information (all quantities must be reported, even if zero):

1. Stationary source identification: Name of company, stationary source name, location, and permit number;
2. The report date and time-period covered by the report;

3. Operations Emission Unit 420, 421, 500, and 501	Condition IV.G. Total hours of operation for each unit and load bank hours each calendar quarter.
4. Fuel Quality Fuel oil and natural gas	Conditions V.F.1, VIII.D.6, VIII.E.2, V.E.3--H ₂ S and %S Sulfur content and date of each fuel delivery. Natural gas hydrogen sulfide concentration.
5. Fuel Consumption Emission Unit 420, 421, and drill rig	Condition V.F.2 and V.F.4 Monthly and consecutive 12 month fuel consumption, for both emission units, combined, and drill rig fuel consumption
6. Operating hours Emission Units 500, 501	Condition IX.C.2 Monthly operating hours for each emission unit.
7. Equipment Flares Emission Unit 507	Conditions V.F.2 Duration, total quantity of gas flared, and reason for flaring.
8. CO Emissions Emission Unit 500, 501	Condition IX.C.2 Monthly and consecutive 12 month CO emissions for each source

9. Unless submitted to the Department under separate cover, the Permittee shall attach or include reports as listed below in accordance with the conditions cited below:
 - a) Periodic NSPS Reporting as set out in condition VI;
 - b) Visible Emission Surveillance Reports as set out in conditions III.D, VIII.B, VIII.D.1, VIII.D.4, and VIII.D.5.
 - c) Certified excess emission reports as set out in condition III.G.5.
10. Certify and submit the stationary source Operating Report to the Department in accordance with conditions III.A, III.A, and III.F.

EXHIBIT C - SUBMISSION LIST

1. Certify and submit all notifications in accordance with conditions III.A and III.A, and 18 AAC 50.205.
2. Submit source test reports and notices required under conditions III.D.2, III.D.3, and III.D.4.
3. Submit monitoring notices and requests set out under conditions III.E and III.F.
4. Submit excess emission and operations notices from condition III.G.5 and Exhibit E.
5. Submit stationary source changes as set out in condition V.B.3 .
7. Submit NSPS/NESHAPs reports/certifications as set out in condition VI.A and VI.B.4.
8. Submit modification notices as set out in condition V.B, XI.D, XI.D.1.a ,XI.D.1.b, XII .
9. Submit the NO_x and CO performance tests as set out in conditions III.D, VI.B.5.
10. Submit the load management demonstration, construction permit application (if applicable), and power generation demonstration as set out in conditions XI and XII.

EXHIBIT D - PERMIT APPLICATION DOCUMENTATION

February 8, 2005	Air Quality Construction Permit application from BPXA for the “Badami restart project”.
March 9, 2005	E-mail from Brian Hoefler (Hoefler) to Albert Faure (ADEC) regarding supplemental information.
March 29, 2005	E-mail Al Trbovich (Hoefler) to Albert Faure (ADEC) regarding supplemental information.
April 13, 2005	E-mail from Albert Faure (ADEC) to Alison Cooke (BPXA) regarding Badami Emission Model.
April 18, 2005	E-mail from Chris Lindsey (Hoefler) to Albert Faure (ADEC) regarding Badami emission model.
April 19, 2005	E-mail from Al Trbovich (Hoefler) to Bill Walker (ADEC) regarding Badami restart information.
April 20, 2005	E-mail from Gordon Schmidt (BPXA) to Bill Walker (ADEC) regarding Badami restart information.
April 28, 2005	E-mail from Al Trbovich (BPXA) to Alan Schuler (ADEC) regarding Badami Public Control Access Plan.
April 29, 2005	E-mail from Al Trbovich (Hoefler) to Albert Faure (ADEC) revised emission model.
May 2, 2005	Copy from Meeting Minutes from Alison Cook (BPXA) to Bill Walker (ADEC) regarding permitting meeting dated February 1, 2005.
May 10, 2005	E-mail Al Trbovich (Hoefler) to Albert Faure (ADEC) supplemental information.
May 10, 2005	E-mail from Steve Barnard (Hoefler) to Alan Schuler (ADEC) transmitting Badami modeling revision.
May 16, 2005	E-mail from Al Trbovich (Hoefler) to Albert Faure (ADEC) Badami restart PTE.
June 16, 2005	E-mail from Alison Cooke (BPXA) to Bill Walker (ADEC) Written Comments on preliminary permit (first set).
June 23, 2005	E mail Alison Cooke (BPXA) to Bill Walker (ADEC) Written Comments on preliminary permit (second set).
July 29, 2005	Letter from Craig Wiggs (BPXA) to Tom Chapple (ADEC) requesting an informal review of Construction Permit AQ0417CPT05.
August 12, 2005	Letter from Tom Chapple (ADEC) to Craig Wiggs (BPXA) containing ADEC decision on informal review requests.

EXHIBIT E - NOTIFICATION FORM

ADEC NOTIFICATION FORM

Stationary Source Name

Air Quality Permit Number

Company Name

When did you discover the Excess Emissions/Permit Deviation?

Date: / / Time: :

When did the event/deviation?

Begin: Date: / / Time: : (please use 24hr clock)

End: Date: / / Time: : (please use 24hr clock)

What was the duration of the event/deviation: : (hrs:min) or days
(total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions/deviation)

Reason for notification: (please check only 1 box and go to the corresponding section)

☐ Excess Emissions - Complete Section 1 and Certify

☐ Deviation from Permit Conditions - Complete Section 2 and Certify

☐ Deviation from COBC, CO, or Settlement Agreement - Complete Section 2 and Certify

Section 1: Excess Emissions

(a) Was the exceedance ☐ Intermittent or ☐ Continuous

(b) Cause of Event (Check one that applies):

☐ Start Up/Shut Down

☐ Natural Cause (weather/earthquake/flood)

☐ Control Equipment Failure

☐ Scheduled Maintenance/Equipment Adjustments

☐ Bad fuel/coal/gas

☐ Upset Condition

☐ Other

(c) Description

Describe briefly what happened and the cause. Include the parameters/operating conditions exceeded, limits, monitoring data and exceedance.

(d) Emission Units Involved:

Identify the emission unit involved in the event, using the same identification number and name as in the permit. Identify each emission standard potentially exceeded during the event and the exceedance.

Unit ID	Unit Name	Permit Condition Exceeded/Limit/Potential Exceedance

(e) Type of Incident (please check only one):

- | | | |
|--|--|---|
| <input type="checkbox"/> Opacity % | <input type="checkbox"/> Venting (gas/scf) | <input type="checkbox"/> Control Equipment Down |
| <input type="checkbox"/> Fugitive Emissions | <input type="checkbox"/> Emission Limit Exceeded | <input type="checkbox"/> Record Keeping Failure |
| <input type="checkbox"/> Marine Vessel Opacity | <input type="checkbox"/> Failure to monitor/report | <input type="checkbox"/> Flaring |
| <input type="checkbox"/> Other: | | |

(f) Unavoidable Emissions:

- Do you intend to assert that these excess emissions were unavoidable? ☐ YES ☐ NO
- Do you intend to assert the affirmative defense of 18 AAC 50.235? ☐ YES ☐ NO

Certify Report (go to end of form)

Section 2. Permit Deviations

(a) Permit Deviation Type (check one only box, corresponding with the section in the permit)

- ☐ Emission Unit Specific
- ☐ General Source Test/Monitoring Requirements
- ☐ Recordkeeping/Reporting/Compliance Certification
- ☐ Standard Conditions Not Included in Permit
- ☐ Generally Applicable Requirements
- ☐ Reporting/Monitoring for Diesel Engines
- ☐ Insignificant Emission Units
- ☐ Stationary Source Wide
- ☐ Other Section: (title of section and section number of your permit)

(b) Emission Unit Involved:

Identify the emission unit involved in the event, using the same identification number and name as in the permit. List the corresponding permit condition and the deviation.

Unit ID	Unit Name	Permit Condition /Potential Deviation

(c) Description of Potential Deviation:

Describe briefly what happened and the cause. Include the parameters/operating conditions and the potential deviation.

(d) Corrective Actions:

Describe actions taken to correct the deviation or potential deviation and to prevent future recurrence.

Certification:

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____ Title: _____ Date: _____
Signature: _____ Phone Number: _____

To Submit this Report:

Fax to: 907-451-2187;

Email to: airreports@dec.state.ak.us - *if emailed, the report must be certified within the Operating Report required for the same reporting period per condition III.F;*

Mail to: ADEC, Air Permits Program, 610 University Avenue, Fairbanks, AK 99709-3643;

Phone Notification: 907-451-5173 - *phone notifications require a written follow-up report within the deadline listed in condition III.H*

Online Submission: (Website is not yet available) - *if submitted online, the report must be certified within the Operating Report required for the same reporting period per condition III.F.*

EXHIBIT F - VISIBLE EMISSIONS FORM

VISIBLE EMISSIONS FIELD DATA SHEET

Certified Observer: _____

Company &
Stationary Source: _____

Location: _____

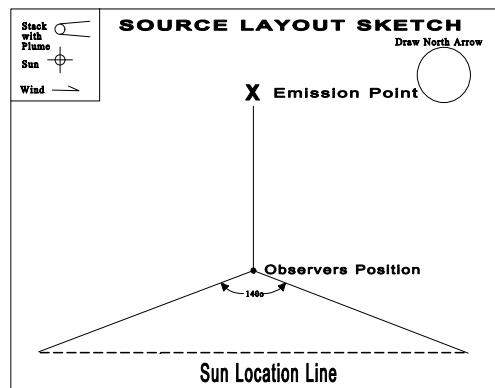
Test No.: _____ Date: _____

Unit: _____

Production Rate/Operating Rate: _____

Unit Operating Hours: _____

Hrs. of observation: _____



Clock Time	Initial				Final
Observer location					
Distance to discharge					
Direction from discharge					
Height of observer point					
Background description					
Weather conditions					
Wind Direction					
Wind speed					
Ambient Temperature					
Relative humidity					
Sky conditions: (clear, overcast, % clouds, etc.)					
Plume description:					
Color					
Distance visible					
Water droplet plume? (Attached or detached?)					
Other information					

Page ____ of ____

Test Number _____ Clock time _____

[illegible]

Observer Signature and Date

Certified By and Date

Duration of Observation Period (minutes) _____

Duration Required by Permit (minutes) _____

Number of Observations _____

Highest Six –Minute Average Opacity (%)_____

Number of Observations exceeding 20 % _____

In compliance with three-minute aggregate opacity limit? (Yes or No) _____

In compliance with six-minute opacity limit? (Yes or No) _____

Set Number	Time Start—End	Opacity	
		Sum	Average

EXHIBIT G – May 10, 2005 PUBLIC ACCESS CONTROL PLAN

BP Exploration (Alaska) Inc.
CPF Pad Badami Unit - Public Access Control Plan

Purpose

This Public Access Control Plan for the Badami Unit Central Process Facility (CPF) Pad, depicted in Figure 1, is to protect the general public from public health and safety hazards that could occur as a result of heavy industrial work during well drilling and work-over activities on state-owned land adjacent to CPF Pad. The planned activity involves drilling for potential petroleum production and work-over of existing wells. BP Exploration (Alaska) Inc. (BPXA) has established these reasonable restrictions on general public access to ensure adequate protection of public health and welfare.

BPXA is committed to fully and adequately protecting the health and safety of its work force by remaining within the standards for air exposure of the Occupational Safety and Health Administration (OSHA) and, where the general public has access, the National and Alaska Ambient Air Quality Standards (AAQS). A primary purpose of this plan is to delineate the area to be protected and controlled for occupational health and safety from the area that is subject to unrestricted, general public access where the AAQS are applicable. A secondary purpose is to ensure that reasonable measures are in place to accomplish reasonable restrictions on public access.

General Information

BPXA is planning well drilling and work-over activity at the Badami CPF as part of the Badami Restart. Consistent with Alaska Department of Environmental Conservation (ADEC) requirements, BPXA has established a drilling operations extended boundary of approximately 600 meters to the west, 80 meters to the north, and 300 meters to the east and 60 meters to the south of the CPF Pad edges. This extended boundary is depicted on Figure 2. All drilling and testing activities will occur on the existing pad. Public access within this extended boundary will be restricted when the drill rig is operating. This extended boundary will not be in effect at any other time.

BPXA has also established a second extended boundary to ensure public safety during flaring by keeping the public a safe distance from the flare at all times. This extended boundary was also used for compliance with the AAQS and the PSD increments during operations. This second extended boundary, as depicted in Figure 2, is:

- A semi-circle with a 40-meter radius centered on the extreme western edge of the pad extension that contains the flare, and
- Lines that extend from the ends of the semi-circle eastward to the western pad edge.

Public Access Control Measures

The area surrounding the CPF Pad is remote, isolated, and physically prohibitive to travel. No established trails, cabin sites or public roads exist at or near the CPF Pad. BPXA will access the Badami Unit by air and/or an ice road system. Public access to the Badami Unit is controlled through BPXA security checkpoints.

Per BPXA policy, all Badami employees are on call 24-hours per day. Consistent with this BPXA policy, worker housing is not considered to be ambient air, per ADEC Policy 04.02.108.

Because the area is road-less and remote, the tundra is effective as a physical barrier to prevent public access. As a practical matter, few people are likely to traverse the area in which the activities will be located. However, access by snow machine is possible. Therefore, during drilling bilingual signs will be posted at five strategic locations, as follows:

- On the access road near the CPF Pad;
- The west side of the CPF Pad at the 600-meter boundary;
- The north side of the CPF Pad at the 80-meter boundary;
- The east side of the CPF Pad at the 300-meter boundary; and
- The south side of the CPF Pad at the 60-meter boundary.

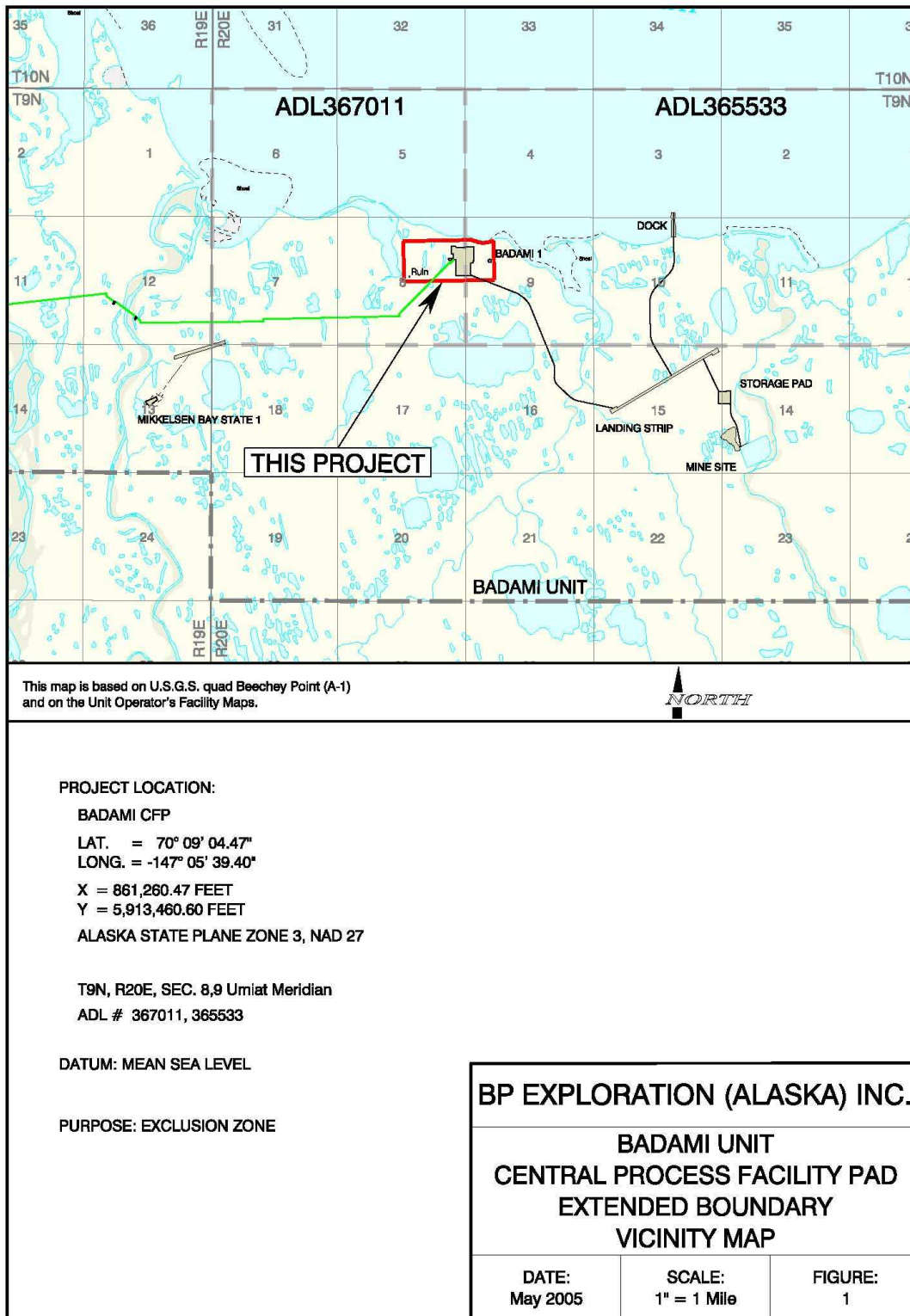
The west, north, east, and south side signage may be moved closer to the pad if tundra conditions during thawing preclude maintenance of the signs at the original locations; or be placed closer to the pad or on the pad edge during times when there are no drilling operations.

The sign specifications are:

- Each sign will be 4 feet by 6 feet and will be supported by sawhorse or pallet post with sandbags.
- Each sign will be written in English and Inupiat.
- Each sign will be inspected regularly and will be repaired or replaced, as necessary.
- Each sign will be free of visible obstructions.
- Each sign will read:

**BP EXPLORATION (ALASKA) INC
DANGER
UNAUTHORIZED PERSONNEL KEEP OUT**

**ANAYANAQTUQ
ISIGUMINAQSIᐃAITCHUAT
SAVAKTIT ISIGUMINAITCHUT**



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